substrates one by one;

a load lock chamber for loading non-processed substrates from the atmosphere into one vacuum processing chamber of said vacuum processing chambers; and

an unload lock chamber for unloading processed substrates from one vacuum processing chamber of said vacuum processing chambers to the atmosphere;

(b) said plurality of cassette mount tables being located at a front side of said atmospheric transfer device and arranged on a substantially horizontal plane;

(c) said load lock chamber and said unload lock chamber being positioned at a rear side of said atmospheric transfer device;

(d) said load lock chamber having, at an atmospheric side and a vacuum side, gate valves opened or closed every time each of said non-processed substrates is loaded or unloaded one by one, for changing over said load lock chamber to either the atmosphere or the vacuum;

(e) said unload lock chamber having, at an atmospheric side and a vacuum side, gate valves opened or closed every time each of said processed substrates is loaded or unloaded one by one, for changing over said unload lock chamber to either the atmosphere or the vacuum;

(f) said atmospheric transfer device being capable of moving at least vertically and being controlled by control means such that each of said non-processed substrates can be taken out of any location in said plurality of cassettes mounted on said plurality of cassette mount tables for transferring to said load lock chamber one by one through said atmospheric side gate valve, and

each of said processed substrates can be transferred one by one from said unload lock chamber to the original location of the original cassette, in which each of said substrates is stored prior to processing, through said atmospheric side gate valve.

48. A vacuum processing apparatus, including:

(a) a plurality of cassette mount tables for mounting cassettes storing substrates;

an atmospheric transfer device for transferring said substrates in an atmosphere;

a plurality of vacuum processing chambers for processing said substrates;

a load lock chamber for loading non-processed substrates from the atmosphere into said vacuum processing chambers; and

an unload lock chamber for unloading processed substrates from said vacuum processing chambers to the atmosphere;

(b) said plurality of cassette mount tables being located at a front side of said atmospheric transfer device and arranged on a substantial horizontal plane;

(c) said load lock chamber and said unload lock chamber being positioned at a rear side of said atmospheric transfer device;

(d) said load lock chamber having, at an atmospheric side and a vacuum side, gate valves opened or closed every time at least one of said non-processed substrates is loaded or unloaded, for changing over said load lock chamber to either the atmosphere or the vacuum;

(e) said unload load chamber having, at an atmospheric side and a vacuum side, gate valves opened or closed every time at least one of said processed substrates is loaded or unloaded, for changing over said unload lock chamber to either the atmosphere or the vacuum;

(f) said atmospheric transfer device being capable of moving at least vertically and being controlled by control means such that said non-processed substrates can be taken out of any location in said plurality of cassettes mounted on said plurality of cassette mount tables for transferring to said load lock chamber through said atmospheric side gate valve, and

said processed substrates can be transferred from said unload lock chamber to the original locations of the original cassettes, in which the substrates are stored prior to processing, through said atmospheric side gate valve.

49. A vacuum processing apparatus, including:

(a) a plurality of cassette mount tables for mounting cassettes storing substrates;

an atmospheric transfer device for transferring said substrates in an atmosphere;

a plurality of vacuum processing chambers for processing said substrates;

double lock chambers either for loading non-processed substrates from the atmosphere into said vacuum processing chambers or for unloading processed substrates from said vacuum processing chambers to the atmosphere;

(b) said plurality of cassette mount tables being located at a front side of

said atmospheric transfer device and arranged on a substantial horizontal plane;

(c) said double lock chambers being positioned at a rear side of said atmospheric transfer device;

(d) said double lock chambers having, at an atmospheric side and a vacuum side, gate valves opened or closed every time at least one of said non-processed substrates is loaded or unloaded for changing over said double lock chambers to either the atmosphere or the vacuum;

(e) said atmospheric transfer device being capable of moving at least vertically and being controlled by control means such that at least one of said non-processed substrates can be taken out of any location in said plurality of cassettes mounted on said plurality of cassette mount tables for transferring to said double lock chambers through said atmospheric side gate valve, and

said processed substrates can be transferred from said double lock chambers to the original locations of the original cassettes, in which the substrates are stored prior to processing, through said atmospheric side gate valve.

50. An apparatus for vacuum processing a substrate, comprising:

plural vacuum processing chambers;

a transfer conveyor for carrying in the substrate into one vacuum processing chamber of said plural vacuum processing chambers, via one lock chamber selected from double lock chambers,

said transfer conveyor carrying out the substrate processed in said vacuum processing chamber via another lock chamber of the double lock chambers, and

said transfer conveyor returns the substrate from said another lock chamber of the double lock chambers to its original position in a cassette, of plural cassettes, in which said substrate is stored prior to processing thereof.--